

What is claimed is:

1. An air conditioning apparatus for a vehicle, comprising:

a coolant cycle including a compressor for compressing a coolant,
an outdoor-side coolant heat exchanger for exchanging heat of the
coolant compressed by the compressor with ambient air, an expansion
unit for expanding the coolant after heat exchange at the outdoor-side
coolant heat exchanger, an indoor-side coolant heat exchanger for
exchanging heat of the coolant expanded by the expansion unit with air
conditioning wind supplied into a vehicle cabin, and a piping connecting
the compressor, the coolant heat exchangers and the expansion unit in
communication with each other;

a water-coolant heat exchanger arranged between the compressor
and the outdoor-side coolant heat exchanger to exchange heat of the
coolant discharged from the compressor with cooling water of a power
source for driving the vehicle;

a flow-path switching unit for selectively introducing the coolant
discharged from the compressor to either a flow path for the
water-coolant heat exchanger or another flow path to avoid the
water-coolant heat exchanger;

a detection unit for detecting a temperature of the cooling water
flowing into the power source; and

a control unit for controlling the flow-path switching unit in a
manner that the coolant discharged from the compressor is introduced to
the water-coolant heat exchanger when the temperature of the cooling
water is equal to or less than a predetermined temperature and that the
coolant discharged from the compressor avoids the water-coolant heat
exchanger when the temperature of the cooling water is more than the
predetermined temperature.

2. The air conditioning apparatus for the vehicle of claim 1, further

comprising:

a first expansion switching unit for selectively introducing the coolant supplied into the indoor-side coolant heat exchanger to either a flow path for the expansion unit or another flow path to avoid the expansion unit;

a heating expansion unit arranged between the water-coolant heat exchanger and the outdoor-side coolant heat exchanger to expand the coolant supplied to the outdoor-side coolant heat exchanger; and

a second expansion switching unit for selectively introducing the coolant supplied into the outdoor-side coolant heat exchanger to either a flow path for the heating expansion unit or another flow path to avoid the heating expansion unit.

3. The air conditioning apparatus for the vehicle of claim 1, further comprising a heat-exchanger switching unit for selectively introducing the coolant after heat exchange at the outdoor-side heat exchanger to either a flow path for the indoor-side coolant heat exchanger or another flow path to avoid the indoor-side coolant heat exchanger.

4. The air conditioning apparatus for the vehicle of claim 1, further comprising an internal heat exchanger that performs heat exchange between the coolant discharged from the outdoor-side coolant heat exchanger and the coolant flowing into the compressor.

5. The air conditioning apparatus for the vehicle of claim 1, wherein the power source for driving the vehicle comprises an engine.